CLAIMS

1. A master alloy for casting a copper alloy, comprising:

Cu: 40 to 80%, Zr: 0.5 to 35% and the balance of Zn.

2. A master alloy for casting a copper alloy, comprising:

Cu: 40 to 80%, Zr: 0.5 to 35%, P: 0.01 to 3% and the balance of Zn.

3. The master alloy for casting a copper alloy according to claim 1 or 2, further comprising:

one element selected from the group consisting of Mg: 0.01 to 1%, Al: 0.01 to 5%, Sn: 0.1 to 5%, B: 0.01 to 0.5%, Mn: 0.01 to 5% and Si: 0.01 to 1%.

4. The master alloy for casting a copper alloy according to claim 1 or 2,

wherein said Cu occupies 50 to 65%, and said Zr occupies 1 to 10%.

5. The master alloy for casting a copper alloy according to claim 1 or 2,

wherein said master alloy is an ingot formed in the shape of a boat, continuous casting material formed in the shape of a rod or wire, or hot extrusion material formed in the shape of a rod or wire.

6. A method of casting a modified copper alloy from a molten copper alloy containing Zr and P, which comprises:

providing a molten copper alloy;

adding at least Zr in the form of Cu-Zn-Zr alloy or Cu-Zn-Zr-P alloy into said molten copper alloy;

and casting said molten copper alloy.

7. The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 6,

wherein a concentration of metal Zr in the molten alloy is in a range of 5 ppm or more, preferably 20 to 500 ppm in a presence of P when the molten copper alloy begins to solidify.

8. The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 7,

wherein an amount ratio of P to Zr in said molten copper alloy satisfies $0.5 < P/Zr < 150$, preferably $1 < P/Zr < 50$, and more preferably $1.2 < P/Zr < 25$.

9. The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 7,

wherein primary alpha phases begin to be crystallized during solidification.

10. The method of casting a modified copper alloy from a

molten copper alloy containing Zr and P according to claim 9, wherein beta phases are crystallized by peritectic or eutectic reactions.

11. The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 9, wherein kappa, gamma, delta and/or mu phases are precipitated in an alpha phase matrix by a solid phase reaction.

12. The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 6, wherein a copper alloy to be modified is one selected from the group consisting of Cu - Zn, Cu - Zn - Si, Cu - Zn - Sn, Cu - Zn - Al, Cu - Zn - Bi, Cu - Zn - Pb, Cu - Zn - Si - Mn, Cu - Zn - Si - Pb, Cu - Zn - Si - Sn, Cu - Zn - Si - Al, Cu - Zn - Sn - Pb, Cu - Zn - Sn - Bi, Cu - Zn - Sn - Al, Cu - Sn, Cu - Sn - Pb, Cu - Sn - Bi, Cu - Al, Cu - Al - Si, Cu - Si, Cu - Cr, Cu - Pb, Cu - P, and Cu - Te.

13. The method of casting a modified copper alloy from a molten copper alloy containing Zr and P according to claim 12, wherein said copper alloy to be modified satisfies $60 < Cu - 3.5Si - 1.8Al - 0.5X + 0.5Y + Mn < 90$ where X is Sn, Sb, As or Mg and Y is Pb, Bi, Se, Te or Cr.